UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
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QUALITY ASSURANCE MEMORANDUM FOR ORGANIC CHEMICAL ANALYSES

Date: August 27, 2015

To: Rob Rau
Office of Compliance and Enforcement, USEPA Region 10

From: Chris Pace, Chemist
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Subject: Quality Assurance Review for the Total Petroleum Hydrocarbon-Gasoline Range Extended Analysis of Samples from the Western Gas LUST GW Sampling 2015

Project Code: OCE-003B
Account Code: 2015F10P303D8610007

The following is a quality assurance review of the data for gasoline range organics (TPH-Gx) of samples from the above referenced site. The analyses were performed by the EPA Region 10 Laboratory using Washington State Department of Ecology Method NWTPH-Gx.

This review was conducted for the following water samples:

15284300 15284301 15284302 15284303

1. Data Qualifications

Comments below refer to the quality control specifications outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). No excursions were required from the method Standard Operating Procedure.

The quality control measures which did not meet Laboratory/QAPP criteria are annotated in the title of each affected subsection with "*Laboratory/QAPP Criteria Not Met*".

For those tests for which the EPA Region 10 Laboratory has been accredited by The NELAC Institute (TNI), all requirements of the current TNI Standard have been met.

2. Sample Transport and Receipt

Upon sample receipt, no conditions were noted that would impact data quality.

3. Sample Holding Times

The concentration of an analyte in a sample or extract of a sample may increase or decrease over time depending on the nature of the analyte. The holding time maximum criteria applied to preserved water samples is 14 days from the time of collection. All samples were analyzed within the applicable criteria.

4. Sample Preparation

Samples were prepared according to the method/SOP.

5. Initial Calibration

Initial calibrations were performed on 7/157/15 for gasoline range organics and the surrogate, 1,4-difluorobenzene. Percent relative standard deviations (%RSDs) of the RRFs met the criteria of ≤20% or the correlation coefficients met the criteria of ≥0.99.

6. Continuing Calibration Verification (CCV)

The CCV met the criteria for frequency of analysis and relative retention time (RRT) windows for all target and surrogate compounds. The percent accuracies were 80-120% of the true values.

7. Blank Analysis

Method blanks were prepared and analyzed with each sample extraction batch to evaluate the potential for laboratory contamination and effects on the sample results. TPH-Gx was not detected in the blanks.

8. Surrogates

Surrogate recoveries are used to help in the evaluation of laboratory performance on individual samples. All surrogate recoveries for the samples were within the criteria of 50-150%.

9. LCS/LCSD

Data for laboratory control sample/laboratory control sample duplicates (LCS/LCSD) are generated to provide information on the accuracy and precision of the analytical method and the laboratory performance. The LCS/LCSD recoveries were within the QAPP criteria of 50-150% with a relative percent difference (RPD) of ≤35.

10. Duplicate Sample Analysis

Duplicate sample analyses are performed to provide information on the precision, in the matrix of interest, of the analytical method. Duplicate analysis was performed using sample 15284300. All results which were above 5 times the reporting limit met the QAPP relative percent difference (RPD) criteria of ≤35.

11. Compound Quantitation

The initial calibration functions were used for calculations. Reported quantitation limits were based on the initial calibration standards and sample size used for the analysis.

All manual integrations have been reviewed and found to comply with acceptable integration practices.

12. Identification

Gasoline range organics is a collective term for volatile petroleum products, e.g. gasolines, naphtha, mineral spirits, stoddard solvent, and other volatile petroleum products.

Water Samples 15284300 and 15284301 resulted with gasoline range organics above the method reporting limit. The TPH-Gx GC/MS chromatograms of 15284300 and 15284301 most closely resemble weathered gasoline and potentially volatile components of a heavier fuel such as kerosene.

13. Data Qualifiers

All requirements for data qualifiers from the preceding sections were accumulated. Each sample data summary sheet and each compound was checked for positive or negative results. From this, the overall need for data qualifiers for each analysis was determined. In cases where more than one of the preceding sections required data qualifiers, the most restrictive qualifier has been added to the data.

The usefulness of qualified data should be treated according to the severity of the qualifier in light of the project's data quality objectives. Should questions arise regarding the data, contact Chris Pace at the Region 10 Laboratory, phone number (360) 871 - 8703.

Qualifier	Definition
U	The analyte was not detected at or above the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
UJ	The analyte was not detected at or above the reported value. The reported value is an estimate.
R	The presence or absence of the analyte can not be determined from the data due to severe quality control problems. The data are rejected and considered unusable. No value is reported with this qualification.
NA	Not Applicable, the parameter was not analyzed for, or there is no analytical result for this parameter. No value is reported with this qualification.